### Using Direct Behavior Rating–Single Item Scales to Assess Student Behavior Within Multi-tiered Systems of Support

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- There is an increased need for school administrators to advance sound behavioral assessment practices to support early intervention and data-based decision making.
- This article reviews applications for an assessment tool called Direct Behavior Rating-Single Item Scales (DBR-SIS) for screening and progress monitoring within multi-tiered systems of support.
- DBR-SIS is a freely accessible, defensible, flexible, and feasible assessment method with a variety of applications for assessing student behavior.

n increased emphasis on collecting and using Adata in schools has occurred, in part, because of the implementation of multi-tiered systems of support (MTSS). Commonly referred to as response to intervention in the academic domain and school-wide positive behavioral interventions and supports in the behavioral domain, these initiatives have a common purpose that promotes a proactive screening approach to the identification and thus early intervention for student difficulties (Bohanon, Goodman, & McIntosh, 2009). Furthermore, multi-tiered systems emphasize routine collection of reliable and valid data to measure student progress (Sugai, 2009). These data allow for timely review to aid in decision making surrounding student supports. As such, the implementation of MTSS necessitates the selection and use of assessments that can provide information to identify students in need of intervention and monitor progress in response to intervention. Such assessments form the foundation for MTSS and are an essential and perhaps underemphasized component of MTSS. Multi-tiered systems can be either enhanced or limited by the quality of data collected as part of the process. That is, these systems can function well only if the data used in decision making are reliable and valid indicators of student performance. Therefore, for school administrators, selecting and using assessments within MTSS requires careful consideration.

Although there are currently a number of validated assessments available for screening and

progress monitoring in academic domains, a key issue for behavioral domains involves limited options that permit frequent, repeatable, and efficient assessment methods (Chafouleas, 2011). This is particularly problematic given that challenges related to student behavior are among the most problematic issues facing teachers and school administrators and are also frequently cited as primary concerns by the public (Liaupsin & Scott, 2008; Rose & Gallup, 2005). As a result, school personnel have often relied on developing and using their own behavioral assessment tools on a case-by-case basis to meet progress-monitoring needs. For example, common approaches to progress monitoring may include various types of behavioral point sheets, behavior contracts, or daily report cards. Unfortunately, these informal assessment tools may not be developed in a systematic manner and may not have properties consistent with quality data collection tools (Venn, 2012). That is, these tools may not necessarily provide reliable data or lead to valid inferences and may not demonstrate adequate sensitivity to measure behavior change. These tools often lack information regarding their technical adequacy and thus may lead to inappropriate decisions regarding student supports.

For this reason, a freely accessible measure called Direct Behavior Rating–Single Item Scales (DBR-SIS) was developed to fill a gap in the landscape of validated behavioral assessment tools used within MTSS. Using

DBR-SIS, teachers observe students for a prespecified period of time and provide daily ratings on target behaviors using a 0 to 10 scale to rate the proportion of time the student was engaged in the target behavior (see the appendix). An advantage of DBR-SIS in comparison to existing behavioral assessment methodologies used in progress monitoring is that it combines the benefits of both a rating scale and systematic direct observation of behavior (Chafouleas, Christ, Riley-Tillman, Briesch, & Chanese, 2007; Chafouleas, Riley-Tillman, & Sugai, 2007). Furthermore, investigations regarding the technical adequacy of DBR-SIS have supported the reliability of scores obtained and provided evidence to support its use (e.g., Christ, Riley-Tillman, Chafouleas, & Jaffery, 2011; Riley-Tillman, Chafouleas, Sassu, Chanese, & Glazer, 2008). Recently, DBR-SIS was reviewed by a panel of experts for the National Center on Intensive Intervention. A clear and concise summary of the existing evidence for use of DBR-SIS as a progressmonitoring tool can be found on the National Center on Intensive Intervention Web site, under the Tools Charts (http://www.intensiveintervention.org/chart/ behavioral-progress-monitoring-tools).

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DBR-SIS allows for repeated observations and efficient ratings of behavior, which are essential characteristics of any progress-monitoring tool within MTSS. Furthermore, DBR-SIS also demonstrates sensitivity to behavior change when used for progress monitoring, such that variations in behavior can be detected (Chafouleas, Sanetti, Kilgus, & Maggin, 2012). Recently, extensions have also been made in using DBR-SIS as a brief behavioral screening tool to identify students who may be at risk for behavioral challenges in elementary and secondary grades (e.g., Chafouleas et al., 2013; Johnson et al., 2014). Thus, there is mounting evidence supporting DBR-SIS as a systematic multipurpose behavioral assessment tool and a reliable and valid indicator of student behavior.

The purpose of this article is to outline a framework for school administrators in developing and using DBR-SIS as a behavior assessment methodology within MTSS to identify students in need of intervention and monitor progress in response to

intervention. Because DBR-SIS has applications in both screening and progress monitoring, this flexibility makes it well suited within MTSS, particularly given the evidence base supporting DBR-SIS as a defensible assessment tool. To this end, an overview of DBR-SIS is provided, followed by a discussion of assessment objectives, highlighting how DBR-SIS might be used for various aims within MTSS. We outline specific procedures for using DBR-SIS within MTSS, illustrate its use within a case-study context, and provide guidance based on our experience using DBR-SIS with school-based teams.

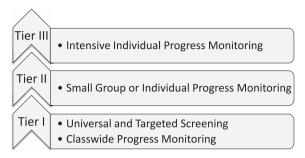
## What Is DBR-SIS and How Do You Use It?

DBR-SIS is a behavioral assessment tool that involves observing a student or group of students for a prespecified period of time and providing ratings on individual scales reflecting broad target behaviors. A large portion of the validation work that has been completed surrounding DBR-SIS involves a standard form that includes three core behavioral competencies that are essential to student success: academic engagement, respectful, and disruptive behavior. Procedures for completing the form are simple. First, the rater completes the top portion of the DBR-SIS form, including the date, student name, and time, and specifies whether there were any changes to the typical classroom routine during the observation period. In our empirical studies, the duration of the observation period has ranged from 25 minutes to the entire school day, depending on the aims of the assessment. Second, immediately following the observation period, the rater indicates the percentage of time the student was engaged in each target behavior, on a scale from 0-10. Collecting DBR-SIS data requires minimal modifications to existing classroom practice and nominal time to complete the rating for a student. As such, DBR-SIS provides a quick assessment of core behavioral competencies and is also evidence based.

# How Can DBR-SIS Be Incorporated Into Behavior Assessment?

The process for completing the DBR-SIS form is efficient, and the observations occur during typical classroom activities. During instruction, the observer simply monitors the behavior of the target student(s)

Figure 1. Direct Behavior Rating–Single Item Scales implementation within multi-tiered systems of support.



and subsequently provides ratings of the target behaviors. However, specific procedures for completing the form can vary depending on the purpose of the assessment and how the data will be used in decision making. Thus, the first step in using DBR-SIS as a behavioral data collection tool is to determine the purpose of the assessment.

## Step 1: Determining the Purpose of the Assessment

MTSS have been advanced to provide a continuum of academic and behavioral supports based on student needs. Typically conceptualized as three-tiered systems of support, MTSS involves the use of increasingly intensive practices as student needs are indicated as being more intensive. Thus, data collection within MTSS must be considered within each tier of support, such that higher levels of support will require more frequent and intensive data collection and review. As depicted in *Figure 1*, DBR-SIS can serve several assessment purposes within MTSS.

As outlined previously, the standard DBR-SIS form targets three core behavioral competencies that are essential to student success: academic engagement, respectful, and disruptive behavior. Thus, it is important to determine if the behavior of concern would be captured within these scales by evaluating the definitions of the target behaviors. Another consideration is to determine if DBR-SIS is well suited for the assessment. For example, as a duration-based indicator (e.g., how long the student was engaged in each target behavior), DBR-SIS is best suited for applications in which duration of behavior is of primary interest. If not, alternative assessment procedures may be a better fit. Once this determination has been made, the scope of the evaluation must be determined. That is, is the purpose of the evaluation to identify students in need of intervention (screening) or to monitor student progress in response to intervention (progress monitoring)?

#### Tier I: Behavioral Screening

A primary goal of data collection within Tier I involves the identification of students who are not benefitting from universal evidence-based strategies. To this end, students should be periodically screened to determine their need for more intensive intervention. Just as students are screened for academic skills approximately three times per year, behavioral screening should also occur to aid in the early identification of students with behavioral challenges. There is an emerging research base involving the use of DBR-SIS as a behavioral screening tool (see www.directbehaviorratings.org). As part of this research, preliminary screening procedures and DBR-SIS cut scores have been identified to identify students as at risk in terms of their academic engagement, respectful, and disruptive behavior. By using proactive screening procedures, students who are experiencing difficulty can be identified early on, and interventions can be developed to support student success before behavioral difficulties intensify and become more difficult to manage.

## Across the Tiers: Evaluating Behavioral Progress in Response to Intervention

As part of MTSS, student progress must be evaluated as interventions are developed and implemented to inform decisions surrounding student supports. Evaluations can be used within each tier of a threetier MTSS. These evaluations can serve two primary purposes: (a) they can be used for summative evaluation to determine student progress toward a specific goal or objective or (b) they can be used as a formative evaluation to determine how student behavior changes over time (e.g., Is the behavior increasing or decreasing? At what rate is the behavior changing?). Within MTSS, both summative and formative evaluations contain important information for decision making, but the scope changes depending on the purpose of the evaluation. Formative Evaluation. Formative evaluations are collected in a frequent and ongoing basis to inform decisions surrounding whether to maintain, modify, or abandon the current course of action (Bijou, 1977). Formative evaluations are essential in monitoring student progress and making real-time decisions based on student performance. Formative evaluations may

take place within each tier of a three-tier MTSS. However, the frequency with which formative data are collected is typically related to the tier at which decision making is occurring within MTSS. That is, the frequency of data collection often increases at each tier, such that student performance is measured on an increasingly intensive basis. Furthermore, the unit of analysis (group or individual) can vary both within and between tiers. More specifically, formative data can be collected at the classroom level within Tier I, whereas group and/or individual data may be collected within Tier II and intensive individual data collected at Tier III. The flexibility of DBR-SIS permits adaptation of the tool based on the purpose of the assessment.

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Summative Evaluation. Summative evaluations provide important information regarding global program or intervention effectiveness (Gast, 2010). Summative evaluations are typically used to make decisions regarding student competency. In particular, summative evaluation is essential for making decisions regarding whether a student has met the goals outlined in his or her behavioral intervention plan or individualized education plan. This type of decision making is typically needed surrounding intensive Tier III supports and individualized intervention plans. For example, a student may have a specific quantitative goal to increase his or her academic engagement during direct instruction and independent seatwork to levels greater than 80% on average across 2 consecutive weeks. Daily DBR-SIS data may be synthesized in such a way to provide evidence as to whether or not the student met his or her goal.

## Step 2: Determining Data Collection Procedures

Once the assessment purpose is identified, the logistics surrounding data collection and interpretation can begin to be determined. As depicted by the flow chart in *Figure 2*, several guiding questions must be answered order to inform the data collection process. As with any system, having consistent and clear

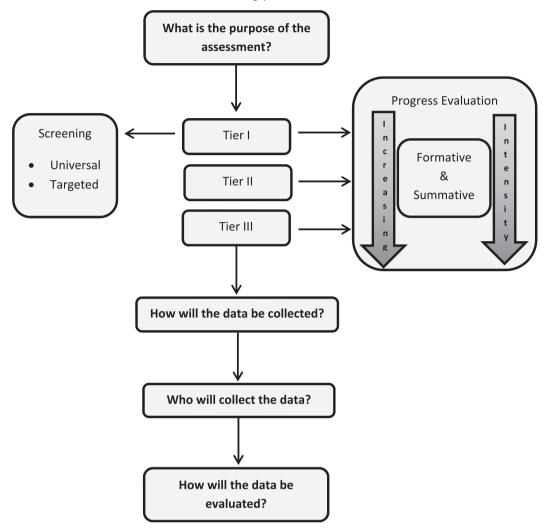
procedures will help facilitate the process. Thus, adopting procedures at the school level will assist in routine behavioral data-based decision making.

Determining the logistics surrounding data collection is an essential part of the assessment process. In particular, answering questions related to the *who*, *what*, *when*, and *where* of data collection is important. In light of the difficulties faced by many school personnel in regard to available time and resources to collect data, these logistical issues can be highly important to practitioners. However, prior to determining specific data collection procedures, several key considerations must be addressed (*Table 1*).

"It is important to note that a consistent rater should be identified to complete the ratings (that is, the same person should rate the student throughout the rating period)."

Once DBR-SIS has been identified as a viable option for data collection and the scope of the evaluation has been identified, the rater must be selected. Typically, DBR-SIS ratings are completed by the classroom teacher during regular classroom activities, but ratings can be completed by anyone with daily and regular contact with the student in the setting to be evaluated. It is important to note that a consistent rater should be identified to complete the ratings (that is, the same person should rate the student throughout the rating period). After the rater is identified, it is essential to determine if the rater perceives that DBR-SIS is a usable data collection tool. By usable, we mean that the rater finds the tool to be acceptable and feasible and that he or she has the skills and necessary supports to promote successful implementation. If these conditions do not exist, the integrity of the data may be affected. If DBR-SIS is deemed to be appropriate for use, then training in DBR-SIS rating procedures should be completed prior to collecting data to confirm understanding of behavioral definitions, increase familiarity with rating procedures, and provide practice to anchor ratings using the scale. To facilitate this process, a brief DBR-SIS training module is freely available online at http://directbehaviorratings.com/training. The module can be completed in approximately 40 minutes and provides opportunities for practice and feedback in conducting DBR-SIS ratings.

Figure 2. A model to demonstrate the assessment decision-making process.



The next step is to specify *where, when,* and *how often* DBR-SIS ratings will occur. DBR data-collection procedures will vary based on the purpose of the assessment. That is, if the purpose is to screen students

for behavioral difficulty, the procedures will be slightly different than if the purpose is to monitor student progress. Therefore, logistics for behavioral screening and progress monitoring will be reviewed in turn.

Table 1: Key considerations to address prior to using Direct Behavior Rating-Single Item Scales (DBR-SIS)

Key considerations
. Is DBR-SIS an appropriate data collection tool for the identified purpose?
° Tier I screening
° Tier I–III progress monitoring
2. Who should serve as the rater?
B. Does the intended rater perceive DBR-SIS as usable?
$^{\circ}$ If not, can modifications be made to facilitate acceptability and use?
I. Does the rater have supports needed to begin implementation of DBR-SIS?
$^{\circ}$ Have they been trained?

Table 2: Cut scores proposed in screening

	Fall	Winter	Spring
	L	ower elementary (1–	-2)
Composite cut score	26.2	26.4	26.5
	L	pper elementary (4–	-5)
Composite cut score	27.3	26.8	27.8
	Middle school (7–8)		
Composite cut score	27.5	28.2	28.1

#### **Data Collection: Behavioral Screening**

In our work using DBR-SIS as a screening tool, we have used a consistent set of procedures to identify students who may be at risk for maladaptive behavior. Up to five students may be observed concurrently for 5 days, and DBR-SIS ratings are provided twice per day, resulting in a total of 10 ratings per student. For elementary classrooms, we have split the school day into morning and afternoon observations. For secondary classrooms, we have split class periods in half, such that target students are rated halfway through the period and again at the end of the period. At the end of the observation period, the teacher or staff member provides ratings on each of the three core behaviors for each student. At the end of the rating period, composite scores are then created for each student that are a sum of each student's mean academic engagement, disruptive, and respectful ratings (with disruptive behavior reverse coded). Composite scores are rounded to the nearest 10th and range in value from 0 (reflecting maladaptive behavior) to 30. Composite scores are then compared to cut scores based on (a) the student's grade group (lower elementary, upper elementary, middle school) and (b) the time of year the screening was conducted (fall, winter, or spring). If the student's cut score is at or below the cut point, that student is deemed to be at risk for maladaptive behavior, and additional assessments or supports should be implemented (see *Table 2*).

## Data Collection: Behavioral Progress Monitoring

As discussed previously, the flexibility of DBR-SIS allows for both group and individual progress monitoring. In either case, it is important to note that baseline data (preintervention) should be collected first to use as a comparison in determining student

progress for either summative or formative evaluation. As a general rule of thumb, five baseline data points are generally considered sufficient, provided data are relatively stable, particularly at the time of intervention implementation (Horner et al., 2005). When collecting progress-monitoring data, it is important to first establish the time and setting of the observations, as well as the frequency of observations. In terms of frequency, it is recommended that DBR-SIS data be collected at least on a daily basis. The timing and setting of observations will depend on the frequency and setting of problem behaviors, that is, when are the problem behaviors most likely to occur? For frequent problem behaviors that persist throughout the day, it may be preferable to conduct DBR-SIS ratings twice daily by splitting the school day in half: rating once before lunch and once at the end of the day. These observation periods would span the course of the entire school day but are possible only when the student remains with a consistent teacher throughout the day. In middle school settings, where students rotate through classes throughout the day, observations would typically span target periods (e.g., Algebra, Language Arts). The flexibility of DBR-SIS allows the observations to be structured and tailored to meet the needs of the evaluation.

Once the specific details surrounding the rating are determined, the forms can be prepared and data collection can begin. An additional and often overlooked process in the data collection process involves evaluating the fidelity of data collection. That is, it is important to examine if observations and ratings are occurring as delineated. For example, it is important to evaluate whether ratings are completed as specified, immediately following the observation period, to ensure rating accuracy. If DBR-SIS ratings are completed later than specified (e.g., if the teacher forgot to fill out the form and provided retrospective ratings the following day), the data could be inaccurate and lead to potentially erroneous decisions. Thus, it is important to monitor the fidelity of data collection to ensure procedures are followed and valid data are obtained. For example, DBR forms may be collected and reviewed daily to ensure timely completion.

#### **Step 3: Data-Based Decision Making**

As screening or progress-monitoring data are obtained, specific procedures must be in place to review the data in order to inform decisions surrounding student progress and supports. In particular, specific decisions will need to be made in regard to the following:

- Who will summarize the data?
- What is the schedule and process for data review?
- · How will we summarize it?
- · What are our decision rules?

Perhaps the most effective and efficient way to review DBR-SIS data is to integrate the review process into already existing structures and procedures. For example, including regular review of DBR-SIS data in child study teams would be a logical and efficient method for data review. It is important to consider how the data review process can fit in with and complement existing processes and schedules.

DBR-SIS data can be aggregated and summarized in a number of different ways. Meaningful organization of the data is important as it will facilitate the decision-making process. For example, data for summative evaluations could be structured by examining pre-/postintervention differences using summary statistics, such as average daily DBR-SIS ratings for each scale. More fine-grained analyses can occur by examining DBR-SIS ratings in different settings or at different times during the day. In formative evaluations in particular, graphing DBR-SIS data can be very helpful and informative. Line graphs are particularly beneficial for analyzing behavior change over time: DBR data are simply placed on the y-axis, and the observation interval (date or morning/afternoon) is placed on the x-axis. A goal line can also be added to the graph, such that progress toward specific goals can be assessed.

"Line graphs provide an efficient way to monitor student progress, such that data can be examined in terms of level (low, medium, high), trend (increasing or decreasing), and variability (the fluctuation of the data points)."

Particular consideration should be given to developing decision rules around DBR data. In particular, for progress monitoring, the data-based decision-making team will need to determine whether the student is making adequate progress with the current intervention in place or if modifications need to be made. This determination

can be made using several strategies. Line graphs provide an efficient way to monitor student progress, such that data can be examined in terms of level (low, medium, high), trend (increasing or decreasing), and variability (the fluctuation of the data points). Regular and frequent review of data will also help facilitate the decision-making process, so that interventions and supports can be modified accordingly. The development of quantifiable goals will also aid in the decision-making process, such that progress toward goals can be evaluated.

For screening, preliminary work has been conducted to identify cut scores that may be used when determining whether a student is at risk for behavioral difficulties. As discussed previously, cut scores have been suggested for both individual target behaviors and a DBR behavioral composite that includes a simple sum of average ratings on the three target behaviors (with disruptive behavior reverse-coded). For detailed information on DBR use in screening, the reader is referred to Johnson et al. (2014).

#### **Case Illustrations**

#### **Progress Monitoring at Tier III**

Alexis is a fourth-grade student who is referred to the child-study team at Washington Elementary due to attention concerns. Ms. Turner reports that she has tried several strategies to keep Alexis engaged in instruction, such as preferential seating and frequent prompts but reports that she has not seen improvements. The team recommends that Ms. Turner use DBR-SIS to collect information about Alexis' behavior. Because Alexis appears unengaged throughout the day, the team recommends that Ms. Turner complete DBR-SIS ratings twice daily by splitting the day in half. Having never used DBR-SIS before, Ms. Turner first completes the online training module and begins collecting baseline data on Alexis' academically engaged behavior for 5 days. At the end of the week, she calculates average ratings across the morning and afternoon and shares the data at the next child-study team meeting. Based on the baseline data, it appears that Alexis was engaged on average 55% in the morning and 80% in the afternoon. Given Alexis' difficulty remaining engaged during the morning work period, the team develops an intervention that teaches Alexis to self-monitor her academic engagement during the morning work

period. Alexis then earns activity-based rewards, such as extra computer time, when she meets her daily goal of academically engaged behavior.

#### Targeted Screening at Tier I

Mr. Rodriguez is a fifth-grade teacher with a number of students in his class who seem to be having behavioral difficulties. Mr. Rodriguez decides to bring his concerns to the child-study team, and as a group, they decide that targeted screening data may be helpful in identifying students in need of Tier II support. He selects 10 students who seem to be having challenges to rate using DBR-SIS. He divides the day in to a morning rating period and afternoon rating period and rates five target students immediately following the morning block and afternoon block for 5 days. He then rates the remaining five students the following week. Following data collection, Mr. Rodriguez calculates average scores for each student and each target behavior and calculates a composite score. By comparing average DBR composite scores to established cut scores, Mr. Rodriguez is able to identify those students in need of Tier II behavioral support. In addition, he can examine student ratings relative to one another to identify those students in need of higher levels of support.

# Considerations in Using DBR as a Data Source

As illustrated by the case studies above, DBR-SIS has a variety of applications as a data source within MTSS. Specifically, DBR-SIS can be used as an assessment tool for screening and progress monitoring and can facilitate communication and data-based decision making among parents and school staff. As a communication tool, DBR-SIS can be used to provide immediate and consistent feedback regarding student behavior. By sharing DBR-SIS data, parents, staff, and administrators can engage in a common dialogue about student behavior and come together to support students as a team.

In addition to being used as an assessment and communication tool, DBR-SIS can also be used as an intervention tool. By teaching students to use DBR-SIS, they can take responsibility for self-monitoring their own behavior. Engaging in self-monitoring can increase students' awareness of their behavior and foster a sense of responsibility by including the student in the process of rating, graphing, and evaluating his or

her data. Using DBR-SIS as a self-monitoring tool has been supported at the upper elementary and middle-school level; thus, it may be a particularly relevant intervention strategy for students in those grade levels. A number of additional resources are available at http://www.directbehaviorratings.org, including intervention protocols and a video podcast that overviews procedures for developing a self-management intervention.

"Selfmonitoring using DBR-SIS may be a particularly relevant intervention strategy for students in the upper elementary and middle-school grade levels."

As an assessment method with a growing and emerging research base, another consideration involves keeping up to date with the most current research by use of the Web site. School-based teams may also need to engage in periodic troubleshooting surrounding data collection. One common issue involves reevaluating the rating period when attempting to progress monitor student performance. Educators may find that the rating period may need to be shorter or longer than initially proposed to meet the needs of the evaluation and fully capture the behavior(s) of interest. By continually evaluating data collection procedures and needs, adjustments can be made that better fit the needs of the evaluation.

Within MTSS, DBR-SIS has numerous applications as an assessment, intervention, and communication tool. For administrators, consideration should be given regarding how to best integrate DBR-SIS within existing structures and systems. School administrators are well positioned to support sound assessment methods to provide responsive service delivery within their schools. As a validated assessment tool, DBR-SIS provides several advantages over alternative behavioral assessment methods. In particular, with dual applications as both a screening and progressmonitoring tool, DBR-SIS offers a flexible and efficient method to assess student behavior.

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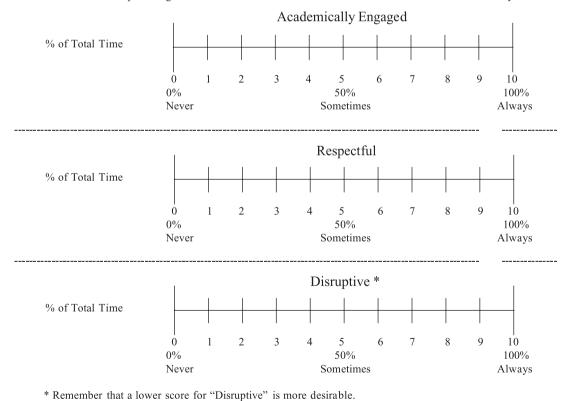
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### **Appendix**

#### DBR-SIS Form: Downloadable from www.directbehaviorratings.org

Date:	Student:	Activity Description:		
M T W Th F	Rater:			
Observation Time:	Behavior Descriptions:			
Start: End:	<b>Academically engaged</b> is actively or passively participating in the classroom activity. For example: writing, raising hand, answering a question, talking about a lesson, listening to the teacher, reading silently, or looking at instructional materials.			
☐ Check if no observation	<b>Respectful</b> is defined as compliant and polite behavior in response to adult direction and/or interactions with peers and adults. For example: follows teacher direction, pro-social interaction with peers, positive response to adult request, verbal or physical disruption without negative tone/connotation.			
today	<b>Disruptive</b> is student action that interrupts regular school or classroom activity. For example: out of seat, fidgeting, playing with objects, acting aggressively, talking/yelling about things that are unrelated to classroom instruction.			

<u>Directions</u>: Place a mark along the line that best reflects the percentage of total time the student exhibited each target behavior. Note that the percentages do not need to total 100% across behaviors since some behaviors may co-occur.



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